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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SJC/DMC/P01896WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/03996	International filing date (day/month/year) 15.09.2003	Priority date (day/month/year) 13.09.2002
International Patent Classification (IPC) or both national classification and IPC B29C45/56		
Applicant DKI PLAST A.S. et al.		



- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of sheets.

- This report contains indications relating to the following items:

- | | | |
|------|-------------------------------------|--|
| I | <input checked="" type="checkbox"/> | Basis of the opinion |
| II | <input type="checkbox"/> | Priority |
| III | <input type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| IV | <input type="checkbox"/> | Lack of unity of invention |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

Date of submission of the demand 08.04.2004	Date of completion of this report 22.10.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Lanz, P Telephone No. +49 89 2399-2916 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/03996**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

Description, Pages

1-15 as originally filed

Claims, Numbers

1-18 as originally filed

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	7, 8, 12, 13
	No: Claims	1-6, 9-11, 14-18
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following document:
D1: US-A-6 010 592
- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 17 is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document):

An apparatus (100) for improving the flow characteristics of injection moulding or extrusion material (see col. 2, lines 11 to 16), the apparatus comprising:

- **a flow path (110) through which a material to be injection moulded or extruded passes in use, and**
- **ultrasonic vibration means (116) arranged for direct contact with material passing through the flow path in use, for directly vibrating the material as it is being injected or extruded (see col. 8, lines 54 to 56).**

The same reasoning applies for the subject-matter of independent claim 17.

- 3 Dependent claims 2 to 16 and 18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and inventive step. The features of ultrasonic probes, direct melt contact, extension into flow path, claimed frequencies, use in an extrusion die or barrel, metallic seating means in the nodal point (col. 15, lines 10 to 34), sonotrode are all disclosed in D1 and therefore render the respective claims not novel (Art. 33(2) PCT).
The feature of using the known apparatus in an injection moulding environment is highly obvious (Art. 33(3) PCT), since extrusion and injection moulding are closely related processes in the field of plastics processing.
Furthermore, D1 explains that the disclosed apparatus can be used in a wide variety of applications reaching from thermoplastic melt processing, combustion engines, incinerators, boilers to gas turbine engines (col. 4, lines 1 to 12).

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International application No. PCT/GB 03/03996

- 4 It seems that also the other documents cited in the search report are novelty destroying for the claimed subject-matter.
- 5 The claimed subject-matter is considered to industrially applicable (Art. 33(4) PCT).
- 6 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.
- 7 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).